RTI PORT and Interface Support

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Description of the Effort

- Support Ada API development;

- Port and Test RTI Version F.0 to IBM RISC;

- Develop and Test Ada API to C++ Interface Binding code;

- Demonstrate Port and Language Interface using CCTT SAF Federate with a JPSD Federate.
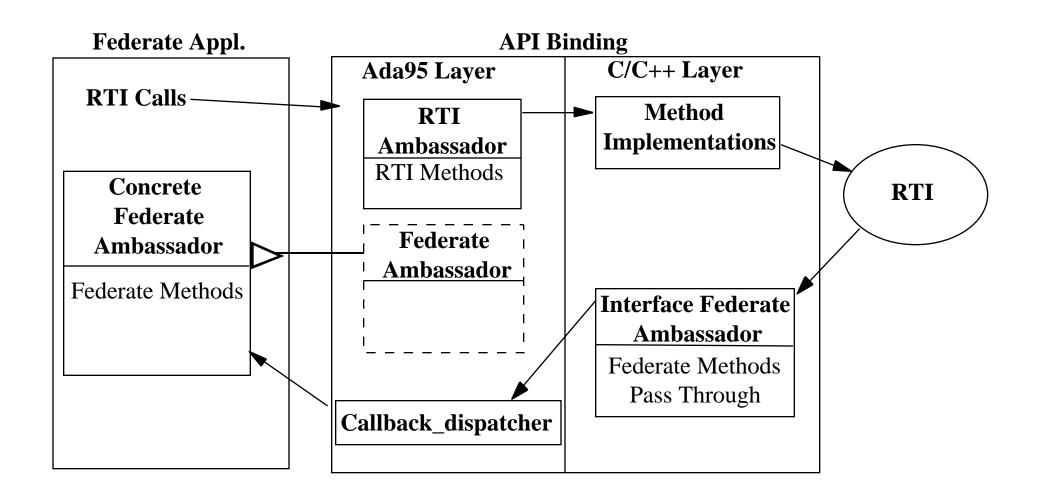
Port Status

- C++ Version of RTI F.0 Successfully Ported to IBM RISC/6000 (Model 43P) under AIX 4.1.4

- Lessons Learned

  - RTI and Applications compiled and linked thread safe,

  - Type scoping issues,

  - Portability of Makefile

  - Several IBM compiler specific issues,

  - Need to select and freeze a version of ACE to be used for RTI

  - Need SLHS patch to AIX 4.1.4 for ACE

- Provided to DMSO RTI Test Support

Ada API to C++ Binding

- Coded and Peer Reviewed
    - (included Reed Little, SEI)
    - No exception propagated currently implemented
    - Immediate returned values to RTI from Federate Amb. methods not currently implemented (ownership transfer).

- Started Testing Effort
    - RISK: Difficult to debug between Ada and C++ language since symptoms show up on runtime environments; also neither debugger can read the entire executable

API Binding Design

Federate Appl.

API Binding

Ada95 Layer

C/C++ Layer

RTI Calls

RTI Ambassador

RTI Methods

Method Implementations

RTI

Concrete Federate Ambassador

Federate Methods

Federate Ambassador

Interface Federate Ambassador

Federate Methods Pass Through

Callback_dispatcher